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Best Japan, price unknown,	7.734
Black Oolong, price unknown,	9.367
Japan, @ 70c.,	11.100
Japan, @ 50c.,	10.059
Young Hyson, @ 25c.	18.538
Japan siftings, @ 25c.	54.075

In these determinations the tea was taken as it is in commerce, without any attempt to remove impurities. Calculating then from Zöller's result for silica, the amount of sanding would be represented in my silica determinations by the excess of 4.35 per cent. In the Japan siftings the sand as an adulteration amounts to 6.89 per cent. of the weight of the tea.

The amount of extract, more than any other test, gives an insight to the real value of the tea as regards strength, as this term is popularly used.

Percentages of extract were:

Japan, best,	37.766
Oolong, black,	33.266
Japan, @ 70c.,	37.692
Japan, @ 50c.,	37.116
Young Hyson @ 25c.,	29.933
Japan siftings, @ 25c.,	27.450

The small percentage of extract in some cases, indicates that the tea leaves were partly spent, probably on account of being exposed to dampness in transportation; also, the extract would be governed somewhat by the amount of sand present.

It is very generally supposed that the cheaper teas contain mineral impurities, due to the method of curing. I tested in two of the cheaper teas for Pb. and Cu., the supposed impurities, but did not find either.

In general it may be said, that though teas are often adulterated, the adulterations are of a harmless nature, and generally governed in amount by the price.

METEOROLOGICAL SUMMARY FOR THE YEAR 1883.

PREPARED BY PROF. F. H. SNOW, OF THE UNIVERSITY OF KANSAS, FROM OBSERVATIONS TAKEN AT LAWRENCE.

The chief characteristics of the weather of 1883 were the low mean temperature of all its months except April, November and December; the unusually long period of immunity from severe frost; the large and well-distributed rainfall; the slight preponderance of northerly over southerly winds; the high average wind velocity; the very high mean barometer, surpassing that of any previous year of our sixteen years' record; and the remarkably brilliant and long-continued orange and crimson sunrise and sunset glow of the last five weeks of the year.

TEMPERATURE.

Mean temperature of the year, 51.66°, which is 1.87° below the mean of the fifteen preceding years. The highest temperature was 96.5°, on July 23d; the lowest was 14° below zero, on the 22d of January, giving a range for the year of 110.5°. Mean at 7 A. M., 45.76°; at 2 P. M., 60.42°; at 9 P. M., 51.66°.

Mean temperature of the winter months, 27.10°, which is 3.12° below the average winter temperature; of the spring, 53.38°, which is .61° below the average; of the summer, 73.20°, which is 3.17° below the average; of the autumn, 52.99°, which is .24° above the average.

The coldest month of the year was January, with mean temperature 19.65°; the coldest week was January 17th to 23d, mean temperature 4.66°; the coldest day was

January 20th, mean temperature 7.3° below zero. The mercury fell below zero eight times, of which five were in January and three in February.

The warmest month was July, with mean temperature 76.18°; the warmest week was June 30th to July 6th, mean 81.30°; the warmest day was July 20th, mean 83°. The mercury reached or exceeded 90° on 26 days (16 below the average number), viz.: one in May, six in June, seventeen in July, one in August, and one in September.

The last hoar frost of spring was on May 22d; the first hoar frost of autumn was on October 14th, giving an interval of 135 days, or nearly five months, entirely without frost. The average interval is 155 days.

The last severe frost of spring was on March 29th; the first severe frost of autumn was on the 1st of November; giving an interval of 217 days, or nearly eight months, without severe frost. The average interval is 199 days. No frost during the year caused damage to crops of grain and fruit. The low temperatures of January and February were generally destructive to peach buds.

RAIN.

The entire rainfall, including melted snow, was 40.65 inches, which has been but twice exceeded on our sixteen years' record (in 1876 and 1877), and is 6.40 inches above the annual average. Either rain or snow, or both, fell on 106 days—three more than the average. On two of these days the quantity was too small for measurement.

There was no approach to a drouth during the year, the longest interval without rain in the growing season being eighteen days, from August 25th to September 7th.

The number of thunder showers was 32. Hail fell on two days, February 3d and May 13th.

SNOW.

The entire depth of snow was 12.50 inches, which is 8.57 inches below the average. Of this amount, five and a half inches fell in January, four inches in February, one inch in October, and two inches in December. Snow fell on 21 days. The last snow of spring was on March 24th; the first snow of autumn was on October 24th.

FACE OF THE SKY.

The average cloudiness of the year was 45.24 per cent., which is .84 per cent. above the average. The number of clear days (less than one-third cloudy) was 169; half-clear (from one to two-thirds cloudy), 98; cloudy (more than two-thirds), 98. There were 71 days on which the cloudiness reached or exceeded 80 per cent. There were 55 entirely clear and 50 entirely cloudy days. The clearest month was November, with a mean of 58.22 per cent.; the cloudiest month was October, mean 58.27 per cent. The percentage of cloudiness at 7 A. M. was 49.47; at 2 P. M., 48.66; at 9 P. M., 37.59.

DIRECTION OF THE WIND.

During the year, three observations daily, the wind was from the S. W. 291 times, N. W. 250 times, N. E. 219 times, S. E. 166 times, S. 58 times, N. 47 times, E. 35 times, W. 20 times. The north winds (including northwest, north and northeast) outnumbered the south (including southwest, south and southeast) in the ratio of 516 to 515.

VELOCITY OF THE WIND.

The number of miles traveled by the wind during the year was 141,164, which is 2,787 miles above the annual average for the ten preceding years. This gives a mean daily velocity of 386.75 miles, and a mean hourly velocity of 16.12 miles. The highest hourly velocity was 60 miles, on May 13th; the highest daily velocity was 1,010 miles, on January 10th; the highest monthly velocity was 15,661 miles, in May. The three windiest months were April, May, and December; the three calmest months were June, August, and September. The average velocity at 7 A. M. was 15.19 miles; at 2 P. M., 17.96 miles; at 9 P. M., 15.58 miles.

BAROMETER.

Mean height of barometer column, 29.135 inches, which is the highest annual mean on our record. Mean at 7 A. M., 29.154 inches; at 2 P. M., 29.114 inches; at 9 P. M., 29.137 inches; maximum, 29.869 inches, on February 17th; minimum, 28.289 inches, on April 22d; yearly range, 1.580 inches. The highest monthly mean was 29.340 inches, in February; the lowest was 28.957 inches, in April. The barometer observations are corrected for temperature and instrumental error only.

RELATIVE HUMIDITY.

The average atmospheric humidity for the year was 69.7; at 7 A. M., 79.85; at 2 P. M., 53.36; at 9 P. M., 76.01. The dampest month was January, with mean humidity, 79.1; the driest month was April, mean humidity, 53.3. There were eighteen fogs during the year. The lowest humidity for any single observation was 10.5 per cent., on April 17th and 24th.